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DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

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National Fish, Wildlife, and Plants Climate Adaptation Strategy

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Notice of availability.

SUMMARY: The U.S. Fish and Wildlife Service (Service), along with the National Oceanic and Atmospheric Administration (NOAA, Department of Commerce), State, and tribal partners (co-leaders), announce the availability of the final *National Fish, Wildlife, and Plants Climate Adaptation Strategy* (NFWPCAS or *Strategy*). The purpose of the *Strategy* is to inspire and enable natural resource professionals and other decision makers to take action to conserve the nation's fish, wildlife, plants, and ecosystem functions, as well as the human uses and values these natural systems provide, in a changing climate. Input from public comments and workshops has been incorporated in the development of

this final document. The *Strategy* is available at
<http://www.wildlifeadaptationstrategy.gov/strategy.php>.

ADDRESSES: The *Strategy* and the *Strategy* Highlights brochure are both available for download at <http://www.wildlifeadaptationstrategy.gov/strategy.php>. Alternatively, you may request a hardcopy of a *Strategy* Highlights brochure by writing via U.S. mail to the Office of the Science Advisor, Attn: National Fish, Wildlife, and Plants Climate Adaptation Strategy, U.S. Fish and Wildlife Service, 4401 N. Fairfax Drive, Suite 222, Arlington, VA 22203.

FOR FURTHER INFORMATION CONTACT: Mark Shaffer, Office of the Science Advisor, at 703-358-2603 (telephone) or wildlifeadaptationstrategy@fws.gov (email), or via the *Strategy* website at <http://www.wildlifeadaptationstrategy.gov/contact-us.php>. If you use a telecommunications device for the deaf (TDD), please call the Federal Information Relay Service (FIRS) at 800-877-8339.

SUPPLEMENTARY INFORMATION: The Service, in cooperation with its co-leaders—NOAA, State agencies, and tribal partners—announces publication of the final National Fish, Wildlife, and Plants Climate Adaptation Strategy (NFWPCAS or *Strategy*).

The adverse impacts of climate change transcend political and administrative boundaries. No single entity or level of government can safeguard wildlife and society against the effects of climate change. This *Strategy* presents a unified approach—reflecting shared principles and science-based practices—for reducing the negative impacts of climate change on fish, wildlife, plants, our natural resource heritage, and the communities and economies that depend on them. The *Strategy* provides a basis for sensible actions that can be taken now, in spite of the uncertainties that exist about the precise impacts of climate change. It also provides guidance about what further actions are most likely to promote natural resource adaptation to climate change, and describes mechanisms that will foster collaboration for effective action among all levels of government, conservation organizations, and private landowners.

I. Background

The climate is changing and these changes are already impacting the nation's valuable natural resources and the people, communities, and economies that depend on them. According to the U.S. Global Change Research Program, there have been significant changes in U.S. climate over the past 50 years, including increases in average temperatures, shifts in rainfall and storm patterns, increases in wildfires, more frequent water shortages, rising sea levels, loss of sea ice, ocean acidification, and coastal flooding and erosion. Given the magnitude of the observed changes in climate, it is not surprising that fish, wildlife, and plant resources in the United States and around the world are already being affected. The impacts can be seen everywhere from working landscapes to

wilderness areas far from human habitation. As the climate continues to change over the next century, so too will the effects on species, ecosystems, and their functions.

Furthermore, climate-induced changes are also likely to exacerbate existing stressors, such as habitat loss and fragmentation, putting additional pressure on our nation's valued living resources.

Rapid warming and other climate changes are already threatening many of the benefits and services that natural systems provide to people, creating new challenges for human health, infrastructure, agriculture, transportation, and energy supplies that depend on natural system services in a variety of ways. At risk are jobs, income, and businesses; clean air and water; protection from floods and erosion; hunting and fishing; wildlife-related tourism and recreation; food and forest production; and, ultimately, our health and quality of life.

Most simply, climate adaptation means helping people and natural systems prepare for and cope with the effects of a changing climate. Climate adaptation is an essential complement to climate change mitigation, or efforts to decrease the rate and extent of climate change by reducing greenhouse gas emissions or enhancing carbon uptake and storage. Integrating adaptation planning into existing efforts and coordinating these efforts among government and nongovernment sectors can help decrease the risks and impacts of climate change on our natural resources, communities, and economies. This *Strategy* outlines the key steps needed to advance this coordinated response across Federal, State, tribal, and local partners through existing and new mechanisms.

II. Strategy Development

Over the past decade, there have been increasing numbers of calls for action by government and nongovernmental entities to better understand, prepare for, and address the impacts of climate change on natural resources and the communities that depend on those resources. For example, in 2007 the U.S. Government Accountability Office released a study entitled *Climate Change: Agencies Should Develop Guidance for Addressing the Effects on Federal Land and Water Resources*, recommending that guidance and tools be developed to help Federal natural resource managers incorporate and address climate change into their resource management efforts. In 2008, the U.S. Global Change Research Program released the report *Preliminary Review of Adaptation Options for Climate-Sensitive Ecosystems and Resources*, which called for and identified a variety of new approaches to natural resource management to increase resiliency and adaptation of ecosystems and resources.

In 2009, Congress asked the Department of the Interior (DOI) and the White House Council on Environmental Quality (CEQ) to develop a national, government-wide climate adaptation strategy for fish, wildlife, plants, and related ecological processes. Language in the Conference Report for the Fiscal Year 2010 Interior, Environment and Related Agencies Appropriations Act (House Report 111–316, pages 76–77) urged CEQ and DOI to “develop a national, government-wide strategy to address climate impacts on fish, wildlife, plants, and associated ecological processes” and “provide that there is

integration, coordination, and public accountability to ensure efficiency and avoid duplication.” In addition, CEQ’s Interagency Climate Change Adaptation Task Force supported this request and called for the development of a climate adaptation strategy for fish, wildlife, and plants in its 2010 Progress Report to the President (<http://www.whitehouse.gov/sites/default/files/microsites/ceq/Interagency-Climate-Change-Adaptation-Progress-Report.pdf>).

In the fall of 2010, the U.S. Fish and Wildlife Service and CEQ invited NOAA and State wildlife agencies (with the New York Division of Fish, Wildlife, and Marine Resources as the State agencies’ lead representative) to co-lead the development of the *Strategy*. The Association of Fish and Wildlife Agencies also provided support and representation of the States’ interests. In addition to the Federal and State partners, the Great Lakes Indian Fish and Wildlife Commission provided staff support to the *Strategy* Management Team.

Initial public outreach during 2009 and 2010 contributed toward developing the following set of key principles to guide the effort as it moved forward:

- Build a national framework for cooperative response.
- Foster communication and collaboration across government and non-government entities.
- Engage the public.
- Adopt a landscape/seascape-based approach that integrates best-available science and adaptive management.

- Integrate strategies for natural resources adaptation with those of other sectors.
- Focus actions and investments on natural resources of the United States and its Territories.
- Identify critical scientific and management needs.
- Identify opportunities to integrate climate adaptation and mitigation efforts.
- Act now.

In late 2010, a diverse group of Federal, State, and tribal agencies were asked to participate as members of an intergovernmental Steering Committee, to provide high-level advice and support for development of the *Strategy*. The Steering Committee includes representatives from 15 Federal agencies with management authorities for fish, wildlife, plants, or habitat, as well as representatives from 5 State fish and wildlife agencies and two intertribal fish and wildlife commissions. The Steering Committee charged a small Management Team, made up of representatives of the Service, NOAA, Association of Fish and Wildlife Agencies (on behalf of the States), the Great Lakes Indian Fish and Wildlife Commission, and the Bureau of Indian Affairs, to oversee the day-to-day development of the *Strategy*. The Management Team was asked to engage with a diverse group of stakeholders, as well as to coordinate and communicate across agencies and departments.

In March of 2011, the Management Team invited more than 90 natural resource professionals (both researchers and managers) from Federal, State, and tribal agencies to form five Technical Teams based around major U.S. ecosystems (marine, coastal, inland waters, forest, and combined grasslands/shrublands/deserts/tundra systems). These Teams, which were co-chaired by Federal, State, and tribal representatives, worked approximately 7 months to provide technical information on climate change impacts and to collectively develop strategies and actions for adapting to climate change.

The co-leaders requested public input for the development of the *Strategy* in a May 24, 2011, notice of intent in the Federal Register (76 FR 30193). After this initial input was incorporated along with the material developed by the Technical Teams, an initial draft of the *Strategy* was circulated in November 2011 to selected Federal and State agencies for comment and to the tribes for consultation.

After incorporating agency input, the Management Team released a public review draft on January 20, 2012 (77 FR 2996), for a 45-day public comment period. Comments received during the public comment period have now been compiled, analyzed, considered, and, where necessary or appropriate, addressed. This notice of availability announces the final *Strategy*.

Please visit the *Strategy* website at <http://www.wildlifeadaptationstrategy.gov> to download a copy of the *Strategy* or a copy of the *Strategy* Highlights brochure, or to obtain additional background on the development of the *Strategy*.

III. Public Involvement

Public involvement is critical for the development of a robust and relevant response to the impacts of climate change. Particularly valuable to the effort are public guidance on priorities, recommendations for approaches, and suggestions based on local knowledge and experience.

Initial outreach and planning for the Strategy began in 2009 and early 2010, with a number of listening and engagement sessions, as well as several Conservation Leadership Forums. More information about past engagement efforts is available at <http://www.wildlifeadaptationstrategy.gov/engagement.php>.

During the public comment period, several public workshops were held around the country, in addition to two online “webinars.” These workshops and webinars provided interested members of the public the opportunity to learn more about the development and goals of the *Strategy*, ask questions, and provide their public comments verbally or in writing. Additional workshops focused on the tribal community were also held across the country and remotely through a webinar. For a complete list of workshops, please visit <http://www.wildlifeadaptationstrategy.gov/public-workshops.php>.

IV. Response to Public Comments

During the public comment period between January 20 and March 5, 2012, more than 55,000 comments were received. The bulk of these were general comments of support submitted as mass mailing comments through campaigns organized by several conservation-focused non-governmental organizations. The remaining 1,400 unique comments were addressed by the NFWPCAS Management Team. Public comments submitted during the 2012 comment period are available on the *Strategy* website, <http://www.wildlifeadaptationstrategy.gov/public-comments.php>. The following is a brief description of the types of comments received and how they were handled. Comments addressed the following subjects.

Positive and Supportive Comments

The Management Team received 53,600 positive comments that were of a form letter nature. In addition, 78 unique comments that were solely positive and supportive regarding the *Strategy* were received. Many comments referred to the overall effort of the *Strategy* as being a needed and necessary step towards climate adaptation. Others referred to specific strategies, actions, or points that were supported by the commenter. There were also commenters that offered their help in implementing the *Strategy* and moving forward with partnerships. There were no major changes made to the document in response to these comments.

Comments Relating to Integration and Implementation of the Strategy

The Management Team received 162 unique comments relating to implementation of the *Strategy*. These ranged from concerns about funding and developing new programs to concerns over jurisdictional authority and management capabilities. The *Strategy* was intended to be a framework for coordinated action rather than a prescriptive action plan. The shared jurisdiction among States, Federal agencies, and tribes necessitates a collaborative approach both to drafting and then implementing the *Strategy*. The Management Team revised the discussion of implementation to clarify the role of the proposed inter-governmental coordinating body for evaluation and implementation for the *Strategy* going forward. Many of the comments concerned integration and coordination with other existing efforts. The Management Team highlighted those efforts, as well as listed related efforts in the *Strategy* Appendix.

Comments Relating to Tribal, Native, and Indigenous Peoples

The Management Team received 86 unique comments relating to tribal, native, and indigenous peoples in the United States. These comments included concerns about insufficient discussion of climate change impacts on indigenous peoples and traditional ecological knowledge possessed by tribal, native, and indigenous peoples. In response to these comments, the Management Team added more information regarding climate change impacts on tribal, native, and indigenous peoples as they relate to fish, wildlife, and plants. The Management Team also added specific information on traditional ecological knowledge and the use of tribal, native, and indigenous peoples' lands as potential monitoring sites.

Comments Relating to Climate Change Impacts both Globally and on Specific Ecosystems

The Management Team received 129 unique comments relating to climate change impacts, including requests for discussion of additional specific impacts, concerns that impacts are covered to a degree that is too in-depth, and challenges to the assertions made in the *Strategy*. The *Strategy* bases its information on impacts on the latest National Climate Assessment, released by the U.S. Global Change Research Program in 2009, which has undergone review by multiple agencies in accordance with the Information Quality Act (Pub. L. 106-554). Discussion of additional impacts to ecosystems was added if the addition was substantive and maintained balanced attention to all ecosystems. The Management Team felt that a strong section covering climate impacts to ecosystems was important to provide context for the later section on adaptation strategies.

Comments Relating to Scientific Information, Tools, and Accuracy

The Management Team received 116 unique comments relating to scientific information, tools, and accuracy. These comments ranged from suggestions for additional or substitute references to concerns about uncertainty and consensus surrounding anthropogenic influence on the climate system. While the *Strategy* acknowledges the role of humans, it presents observed changes in species' ranges and environmental conditions and provides adaptation strategies regardless of the underlying cause. The draft *Strategy*

has undergone a review in accordance with the Information Quality Act and a review by Federal, State, and tribal agencies. References were changed or added only to correct errors or if they substantially added to the quality of document, or if they clarified the discussion of a specific topic.

Comments Regarding Existing Stressors

The Management Team received 82 unique comments regarding existing stressors on fish, wildlife, plants, and their related habitats. The majority of these comments encouraged further discussion of invasive species in the *Strategy*. The Management Team clarified the definition of invasive species and urged consideration of the potential for facilitation of invasive species movement through corridors. Based on comments, the Management Team added an additional action within Strategy 7.3 that explicitly addresses invasive species. Strategy 7.4 was also added to address the need for reduction of destructive capture practices, illegal trade, and over-harvesting.

Comments Regarding the Structure, Leveling, and Prioritization

The Management Team received 153 unique comments regarding the structure and prioritization of the *Strategy*. In response, the Management Team ensured that all actions and items in the Progress Check Lists progressed in a logical order and revised or repositioned items as needed. The Management Team also clarified that the Check Lists are not comprehensive. There were also several comments encouraging prioritization

throughout the *Strategy*. The strategies and actions are not ordered according to their priority, nor does the Implementation section identify a prioritized list of what to pursue. The Management Team decided that priorities should and will ultimately be decided by the implementation body.

Comments Relating to the Clarification and Consistent Use of Terms

The Management Team received 38 unique comments on the need to clarify or be consistent with terms used in the *Strategy*. In particular, definitions of “resilience,” “restoration,” and “invasive species” garnered many comments. Based on the input received and discussions within the Management Team, the terms were further discussed in the text, better defined in the Glossary (Appendix B), or both, and checked for consistency throughout the *Strategy*.

Comments Unrelated to or Outside the Scope of the Strategy

The Management Team received 163 unique comments that fell outside the scope of the *Strategy*’s purpose. These comments included concerns over a lack of emphasis on mitigation of greenhouse gases, changes and references to the ecosystem background papers, and many other considerations that were not the main focus of the *Strategy*. The Management Team included further information on the carbon capture benefits provided

by ecosystems. However, though climate change mitigation is important, the main focus of the *Strategy* is climate adaptation for fish, wildlife, and plants. Public comment on the ecosystem background papers was not solicited as part of the public comment period; therefore, no changes were made in response to comments received regarding the ecosystem background papers. These papers were developed as source material for the *Strategy*, but are not formal appendices to the *Strategy*. Comments that provided background material on climate change mitigation and adaptation were reviewed; however, many were outside the scope of the document. No changes were made in response to comments outside the scope of the *Strategy*.

Comments of an Editorial or Opinion-Based Nature

The Management Team received 270 unique comments that were of an editorial or opinion-based nature. These comments were taken into account during review. The majority of comments of this nature required no change to the document; however, minor changes were made to the *Strategy* in response where necessary, given the purpose and scope of the document.

V. Authority

Conference Report for the Interior, Environment and Related Agencies
Appropriations Act, 2010.

Dated: March 20, 2013

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